UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

Ref: 8ES-MEB

November 20, 1995

MEMORANDUM

SUBJECT: Data validation for Rico Argentine Mine Site, Case #24008, SDG # MHDD70

FROM: Russ Leclerc RLC 11/24/95
Chemist
Program Support Group, Technical Support Team

TO: Greg Oberly
8HWM-SM

The Environmental Services Assistance Team (ESAT) has completed its review of data from the analysis of twenty water samples for Contract Laboratory Program (CLP), Routine Analytical Services (RAS) total metals and cyanide analyses for **Rico Argentine Mine Site, Case 24008**, Sample Delivery Group (SDG) **#MHDD70**. I have evaluated **ESAT's** data validation package and agree with ESAT's review. Data in the enclosed package are acceptable with the qualifiers added to the data reports. Please refer to the attached ICF Kaiser data validation report including the narrative summary and comments for a full explanation of the data review findings.

If you have any questions,or if I can be of further assistance, please contact me at 312-6971.

Attachments

REGION VIII
RAS INORGANIC - SUMMARY OF CLP DATA QUALITY ASSURANCE REVIEW

CASE	SITE NAME	SITE ID\OPERABLE UNIT
24008	Rico Argentine Mine	8ZZ/00
RPM NAME	ESAT TID - 08-9510-703	
Greg Oberly	ESAT WUD - 28	

LABORATORY	CONTRACT NO.	SDG	LABORATORY TPO/REGION
Southwest Laboratory of Oklahoma	68-D3-0040	MHDD70	Ray Flores/VI

DATA REVIEWER Kristy K. Grove REVIEW COMPLETION DATE 11/13/95

SAMPLE ID	SAMPLE LOCATION	MATRIX	DATE COLLECTED
MHCQ94	RA-SW-01	Water	09/13/95
MHCQ98	RA-WGW-02	Water	09/13/95
MHDA88	RA-WSW-02	Water	09/13/95
MHDA92	RA-WSW-09	Water	09/13/95
MHDA93	RA-WSW-01	Water	09/13/95
MHDA94	RA-WGW-01	Water	09/13/95
MHDA96	RA-SW-24	Water	09/13/95
MHDD70	RA-SW-10	Water	09/11/95
MHDD71	RA-SW-11	Water	09/11/95
MHDD77	RA-SW-27	Water	09/11/95
MHDD78	RA-SW-08	Water	09/11/95
MHDD81	RA-SW-09	Water	09/11/95
MHDD82	RA-SW-07	Water	09/12/95
MHDD84	RA-SW-22	Water	09/11/95
MHDD85	RA-SW-04	Water	09/12/95
MHDD87	RA-SW-06	Water	09/12/95
MHDD90	RA-SW-03	Water	09/12/95
MHDD93	RA-SW-02	Water	09/12/95
MHDD96	RA-SW-05	Water	09/12/95
MHDD98	RA-SW-23	Water	09/12/95

Reviewed 11/20/95

DATA QUALITY STATEMENT*

( ) Data are ACCEPTABLE according to the Functional Guidelines with no qualifiers (flags) by the reviewer

(X) Data are acceptable with QUALIFICATIONS noted in review

( ) Data are UNACCEPTABLE according to the Functional Guidelines

Telephone/Communication Logs Enclosed? Yes ___ No _X_

TPO Attention Required? Yes ___ No _X_

If yes, list the items that require attention:

* Please see Data Qualifier Definitions, attached to the end of this report.

INORGANIC DATA QUALITY ASSURANCE REVIEW

REVIEW NARRATIVE SUMMARY

This data package was reviewed according to the EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

Case 24008, SDG MHDD70 consisted of 20 water samples for CLP RAS metals and cyanide analyses. Water samples MHDA96, MHDD84, and MHDD98 were designated rinsate blanks and were used to evaluate sample results.

The following table lists the data qualifiers added to sample analyses.

SAMPLE ID	ELEMENTS - QUALIFIERS	PROBLEM	REVIEW SECTION
MHDD70	cyanide - UJ	Preservation	Holding Times
MHDD85, MHDD87, MHDD90, MHDD93, MHDD96, MHDD98, MHCQ94, MHCQ98, MHDA88, MHDA92, MHDA93	aluminum - J	Continuing Calibration Verification	Form 2A
MHDA96, MHDD84, MHDD98	sodium - UJ	Preparation Blank Results	Form 3
MHCQ94, MHDD70, MHDD77, MHDD81, MHDD85	iron - J	Negative Preparation Blank Results	
MHDD84, MHDD98, MHDA96	magnesium - UJ	Continuing Calibration Blank Results	
MHDD84, MHDA96	sodium - UJ		
MHDD85, MHDD96, MHDD98, MHCQ94, MHCQ98, MHDA96	aluminum - UJ*		
MHDA96	lead - UJ		
MHDD77, MHDD85, MHCQ94	iron - J	Negative Continuing Calibration Blank Results	
MHCQ94, MHDA92	potassium - J		
MHCQ94, MHCQ98, MHDD82, MHDD85, MHDD90, MHDD93, MHDD96	aluminum - UJ	Rinsate Blank Results	
MHDA93, MHDA94	beryllium - UJ		
MHDD82, MHDD87, MHDD96	sodium - UJ		
MHCQ93, MHCQ94, MHDD96	zinc - UJ		
MHCQ98	nickel, thallium - J	ICP Interference Check Sample	Form 4

* Elements previously qualified "J" will carry a final "UJ" qualifier.

INORGANIC DATA QUALITY ASSURANCE REVIEW

SOW OLM03.0

RAS INORGANIC DELIVERABLES COMPLETENESS CHECKLIST

P Inorganic Cover Page
P Inorganic Analysis Data Sheets (Form I)
P Initial Calibration and Calibration Verification Results (Form II)
P Continuing Calibration Verification Results (Form II)
P CRDL Standard for ICP & AA (Form II, Part 2)
P Blank Analysis Results (Form III)
P ICP Interference Check Sample Results (Form IV)
P Spiked Sample Results (Form V)
NR Post-digest Spiked Sample Analysis (Form V, Part 2)
P Duplicate Sample Results (Form VI)
P Instrument Detection Limits (Form X - Quarterly)
P Laboratory Control Sample results (Form VII)
NR Standard Addition Results (Form VIII)
P ICP Serial Dilution Results (Form IX)
P ICP Interelement Correction Factors (Form XII - Quarterly , or Form XI - Annually)
P ICP Linear Ranges (Form XII - Quarterly)
P Raw Data
P Samples P Calibration Standards P Blanks P Spikes
P Duplicates P ICP QC (ICS and Serial Dilution) P LCS
NA Furnace AA P Mercury Analysis P Cyanide Analysis
NA Percent Solids Calculations - Solids Only
P Sample Prep/Digestion Logs (Form XIII)
P Analysis Run Log (Form XIV)
P Traffic Report(s)
P Chain of Custody
P Sample Description
P Case Narrative
P Method References

KEY: P = Provided in original data package, as required by contract
R = Provided as Resubmission
NP = Not provided in original data package or as resubmission
NR = Not required under contract
NA = Not applicable to this data package

Comments: None.

INORGANIC DATA QUALITY ASSURANCE REVIEW

HOLDING TIMES

All CLP-SOW holding times were met.

Yes ___ No _X_

All technical holding times were met.

Yes ___ No _X_

Comments: Sample MHDD70 was not properly preserved to a pH of greater than 12 for cyanide analysis. The following table summarizes sample preservation and the qualifier added to the data.

SAMPLE NUMBER	SAMPLE pH	ELEMENT	QUALIFIER
MHDD70	7	cyanide	UJ

INSTRUMENT CALIBRATION: STANDARDS AND BLANKS

Initial instrument calibrations were performed according to contract requirements.

Yes _X_ No ___

Comments: None.

The instruments were calibrated daily and each time an analysis run was performed.

Yes _X_ No ___

Comments: None.

The instruments were calibrated using one blank and the appropriate number of standards.

Yes _X_ No ___

Comments: None.

FORM 1 - SAMPLE ANALYSIS RESULTS

Sample analyses were entered correctly on the Form I's.

Yes _X_ No ___

Comments: None.

INORGANIC DATA QUALITY ASSURANCE REVIEW

FORM 2A - INITIAL AND CONTINUING CALIBRATION VERIFICATION

The **initial** and **continuing** calibration verification standards (ICV and CCV, respectively) met contract requirements.

Yes _X_ No __

Comments: None.

The calibration verification results were within 90-110% recovery for metals, 80-120% for mercury, and 85-115% for cyanide.

Yes ___ No _X_

Comments: Aluminum had a percent recovery outside the 90-110% recovery limit in one CCV analysis. The following table summarizes aluminum recovery, associated samples and qualifiers added to the data.

ELEMENT	PERCENT RECOVERY	CONTROL LIMITS	SAMPLES AFFECTED - DATA QUALIFIERS
aluminum	110.5	90 - 110	MHDD85, MHDD87, MHDD90, MHDD93, MHDD96, MHDD98, MHCQ94, MHCQ98, MHDA88, MHDA92, MHDA93 - J

The continuing calibration standards were run at 10% frequency.

Yes _X_ No ___

Comments: None.

FORM 2B - CRDL STANDARD FOR ICP AND AA

ICP Analysis: Standards (CRI) at 2X the CRDL or the IDL whichever were greater, were analyzed at the beginning and the end of each sample run, or at a minimum of twice per eight hour shift, whichever was more frequent.

Yes _X_ No ___

Comments: None.

GFAA Analysis: Standards (CRA) at the CRDL or the IDL whichever were greater, were analyzed at the beginning of each sample run.

Yes ___ No ___ N/A _X_

Comments: None.

The CRI and/or the CRA were analyzed after the ICV.

Yes _X_ No ___ N/A __

Comments: None.

FORM 3 - BLANKS

The **initial** and **continuing** calibration blanks (ICB and CCB, respectively) met contract requirements.

Yes _X_ No ___

Comments: None.

The continuing calibration blanks were run at 10% frequency.

Yes _X_ No ___

Comments: None.

A laboratory/preparation blank was run at the frequency of one per twenty samples, or per sample delivery group (whichever is more frequent), and for each matrix analyzed.

Yes _X_ No ___

Comments: None.

All analyzed blanks were free of contamination.

Yes ___ No _X_

Comments: The following table lists the blanks with contamination, elements present, affected samples, and data qualifiers:

TYPE OF BLANK	ELEMENTS PRESENT; CONCENTRATION (µg/L)	SAMPLES AFFECTED - DATA QUALIFIERS
PBW	iron; -26.423	MHCQ94, MHDD70, MHDD77, MHDD81, MHDD85 - J
	sodium; 237.631	MHDA96, MHDD84, MHDD98 - UJ
CCB1	iron; -22.0	MHDD77 - J

INORGANIC DATA QUALITY ASSURANCE REVIEW

TYPE OF BLANK	ELEMENTS PRESENT; CONCENTRATION (μg/L)	SAMPLES AFFECTED - DATA QUALIFIERS
CCB2	iron; -16.8	MHDD85 - J
	magnesium; 79.6	MHDD84 - UJ
	sodium; 199.7	MHDD84 - UJ
CCB3	aluminum; 10.3	MHDD85, MHDD96, MHDD98, MHCQ94, MHCQ98 - UJ*
	iron; -27.8	MHDD85, MHCQ94 - J
	magnesium; 46.5	MHDD84, MHDD98 - UJ
CCB4	aluminum; 8.4	MHDD98, MHCQ98, MHDA96 - UJ*
	iron; -21.6	MHCQ94 - J
	lead; 1.1	MHDA96 - UJ
	magnesium 46.5	MHDD98, MHDA96 - UJ
	potassium; -880.6	MHCQ94, MHDA92 - J
CCB5	aluminum; 24.2	MHDA96 - UJ*
	magnesium; 39.8	MHDA96 - UJ
	sodium; 346.2	MHDA96 - UJ
MHDA96 Rinsate 09/13/95	aluminum; 41.7	MHCQ94, MHCQ98 - UJ*
	beryllium; 1.0	MHDA93, MHDA94 - UJ
	zinc; 6.8	MHCQ94 - UJ
MHDD98 Rinsate 09/12/95	aluminum; 16.0	MHDD82, MHDD85, MHDD90, MHDD96 - UJ*
	sodium; 363	MHDD82, MHDD87, MHDD96 - UJ
	zinc; 6.0	MHDD93, MHDD96 - UJ

* Elements previously qualified "J" will carry a final "UJ" qualifier.

INORGANIC DATA QUALITY ASSURANCE REVIEW

FORM 4 - ICP INTERFERENCE CHECK SAMPLE

The ICP interference check sample (ICS) was run twice per eight hour shift and/or at the beginning and end of each sample set analysis sequence (whichever is more frequent).

Yes _X_ No ___

Comments: None.

Percent recovery of the analytes in solution ICSAB were within the range of 80-120%.

Yes _X_ No ___

Comments: None.

The ICSA and ICSAB contained no false positive or false negative results greater than the IDL.

Yes ___ No _X_

Comments: The following results greater than the IDL were reported for the interference check samples.

ELEMENT	TRUE VALUE	IDL (µg/L)	ICSAI (µg/L)	ICSAM (µg/L)	ICSAF (µg/L)
antimony	0	3.0	3	4	<IDL
barium	0	1.0	2	4	12
cadmium	0	1.0	-3	-2	-3
copper	0	1.0	1	<IDL	-2
lead	0	1.0	-4	-3	-2
manganese	0	1.0	-4	-4	-2
nickel	0	1.0	2	2	2
potassium	0	834.0	3399	2730	3540
selenium	0	2.0	2	-2	-7*
sodium	0	142.0	211	<IDL	<IDL
thallium	0	2.0	5	6	-6
vanadium	0	1.0	-1	<IDL	3

ELEMENT	TRUE VALUE	IDL (µg/L)	ICSAI (µg/L)	ICSAM (µg/L)	ICSAF (µg/L)
zinc	0	1.0	4	6	8

* Absolute value is greater than the CRDL.

ELEMENT	TRUE VALUE	IDL (µg/L)	ICSABI (µg/L)	ICSABM (µg/L)	ICSABF (µg/L)
antimony	0	3.0	4.7	4.3	5.3
arsenic	0	2.0	4.1	<IDL	<IDL
potassium	0	834.0	3504.8	3082.1	3064.5
selenium	0	2.0	<IDL	<IDL	-5.7*
sodium	0	142.0	164.1	340.8	<IDL
thallium	0	2.0	3.2	<IDL	-5.6

* Absolute value is greater than the CRDL.

Comments: Qualifications were made for one sample with comparable or higher levels of interferents and with analyte concentrations that approximate the levels found in the ICS as false positives or false negatives. Listed below are the sample, elements affected by the interferences, and qualifiers added to the data.

SAMPLE	ELEMENT	QUALIFIER
MHCQ98	nickel, thallium	J

FORM 5A - MATRIX SPIKE SAMPLE ANALYSIS

A matrix spike sample was analyzed with every twenty or fewer samples of a similar matrix, or one per sample delivery group (whichever is more frequent).

Yes _X_ No___

Comments: None.

Spike recoveries were within the range of 75 - 125% (an exception is granted where the sample concentration is 4 times the spike concentration).

Yes _X_ No ___

Comments: None.

FORM 5B - POST DIGEST SPIKE RECOVERY

A post-digest spike was performed for those elements that did not meet the specified criteria (exception: Ag, Hg).

Yes ___ No ___ N/A _X_

Comments: None.

FORM 6 - DUPLICATE SAMPLE ANALYSIS

Duplicate sample analysis was performed with every twenty or fewer samples of a similar matrix, or one per sample delivery group (whichever is more frequent).

Yes _X_ No ___

Comments: None.

The RPDs were calculated correctly.

Yes _X_ No ___

Comments: None.

For sample concentrations >5 times the CRDL, RPDs were within ±20% (limits of ±35% apply for soil/sediments/tailings samples).

Yes _X_ No ___ N/A ___

Comments: None.

For sample concentrations <5 times the CRDL, duplicate analysis results were within the control window of ± CRDL (2X CRDL for soils).

Yes _X_ No ___

Comments: None.

INORGANIC DATA QUALITY ASSURANCE REVIEW

GFAA QC

GFAA analyses was not performed for this SDG.

FORM 7 - LABORATORY CONTROL SAMPLE

The laboratory control sample (LCS) was prepared and analyzed with every twenty or fewer samples of a similar matrix, or one per sample delivery group (whichever is more frequent). An aqueous LCS is not required for mercury.

Yes _X_ No ___

Comments: None.

All results were within the control limits.

Yes _X_ No ___

Comments: None.

FORM 8 - STANDARD ADDITION RESULTS

Results from graphite furnace standard additions were correctly entered on Form I and Form VIII.

Yes ___ No ___ N/A _X_

Comments: None.

FORM 9 - ICP QC

A serial dilution was performed for ICP analysis with every twenty or fewer samples of a similar matrix, or one per sample delivery group, whichever is more frequent.

Yes _X_ No ___

Comments: None.

The serial dilution was without interference problems as defined by the functional guidelines.

Yes _X_ No ___

Comments: None.

INORGANIC DATA QUALITY ASSURANCE REVIEW

FORM 10 - QUARTERLY INSTRUMENT DETECTION LIMITS (IDL)

IDL's were provided for all elements on the target analyte list.

Yes _X_ No ___

Comments: None.

Reported IDL's met contract requirements.

Yes _X_ No ___

Comments: None.

CYANIDE INSTRUMENT DETECTION LIMITS (IDL)

An IDL for cyanide was provided in the raw data.

Yes _X_ No ___ N/A ___

Comments: None.

The reported cyanide IDL met contract requirements.

Yes _X_ No ___ N/A ___

Comments: None.

FORM 11 - INTERELEMENT CORRECTION FACTORS FOR ICP

Interelement corrections for ICP were reported and met contract requirements.

Yes _X_ No ___

Comments: None.

FORM 12 - ICP LINEAR RANGES

ICP linear ranges were reported and met contract requirements.

Yes _X_ No ___

Comments: None.

INORGANIC DATA QUALITY ASSURANCE REVIEW

FORM 13 - PREPARATION LOG

Information on the preparation of samples for analysis was reported on Form XIII.

Yes _X_ No ___

Comment: None.

FORM 14 - ANALYSIS RUN LOG

A Form XIV with the required information was filled out for each analysis run in the data package.

Yes _X_ No ___

Comments: None.

Additional Comments or Problems/Resolutions (not addressed above).

None.

INORGANIC DATA QUALITY ASSURANCE REVIEW

REGION VIII

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality. Use of additional qualifiers should be carefully considered. Definitions for all qualifiers used should be provided with each report.

GENERAL QUALIFIERS for use with INORGANIC DATA

R - Reported value is "rejected". Resampling or reanalysis may be necessary to verify the presence or absence of the compound.

J - The associated numerical value is an estimated quantity because the Quality Control criteria were not met.

UJ - The reported amount is estimated because Quality Control criteria were not met. Element was not detected.

TARGET SHEET

EPA REGION VIII

SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOCUMENT NUMBER: 374982

SITE NAME: RICO ARGENTINE/RICO POND

DOCUMENT DATE: 11/20/1995

DOCUMENT NOT SCANNED

Due to one of the following reasons:

- ☐ PHOTOGRAPHS
- ☐ 3-DIMENSIONAL
- ☐ OVERSIZED
- ☐ AUDIO/VISUAL
- ☐ PERMANENTLY BOUND DOCUMENTS
- ☐ POOR LEGIBILITY
- ☐ OTHER
- ☐ NOT AVAILABLE
- ☑ TYPES OF DOCUMENTS NOT TO BE SCANNED
  (Data Packages, Data Validation, Sampling Data, CBI, Chain of Custody)

DOCUMENT DESCRIPTION:

INORGANIC ANALYSES DATA SHEETS

Contact the Superfund Records Center to view available document.
(303) 312-6473